

Science and the Theft of Humanity

In science's renewed interest in the human condition, a humanist sees the promise of a dialogue and a new golden age

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Once upon a time, thinkers simply thought. They pondered deep questions using all the resources at their disposal, and expressed astonishing insights in language at once precise and poetic, descriptive and evocative. Human life was illuminated by being compared to a chariot pulled by two horses of different temperaments, a flowing stream or the task of pushing a stone up a hill. Thought was not compartmentalized, and the same person—Aristotle, for example—could think productively in what would today be considered several distinct modes, including philosophy, political science, ethics and biology.

This spirit of consilience prevailed until quite recent times. Isaac Newton and Francis Bacon were considered by their contemporaries to be ornaments of English "literature," and many whom we now call scientists were called "natural philosophers" in their day. The term "scientist" was only invented in the 19th century as a kind of counterpart to the term "artist"; according to the *Oxford English Dictionary*, the earliest use of the term was 1840, when William Whewell proposed it as a way of describing "a cultivator of science in general." Anthologies of English literature often include the work of Charles Darwin; he was, in the view of many, as great an artist as he was a scientist, a man driven to explain in rational terms things he first apprehended in a state of wonder, delight, and a well-nigh poetic enchantment. And Sigmund Freud, who considered himself a "biologist of the mind," wrote in a way that deployed imagination, rhetoric and narrative without feeling he was compromising his scientific mission.

During the years Freud was doing his clinical work in Vienna and Paris, however, knowledge was being organized by a new kind of institution that had little tolerance for evocative richness. Inspired by the example of the University of Berlin, other institutions of learning were beginning to detach themselves from theology and classics and devote themselves to research. In the United States, the Johns Hopkins University and the University of Chicago were among the first to commit themselves to the research paradigm and thus to the establishment of graduate schools as an integral, even central part of the institution. In institutions with robust graduate schools, notions of training, research and professionalism entered the scene of education, and academic departments became like silos, each with its own mission, its own methodology, its own credentialing process.

Most significantly, each department or discipline laid claim to its own set of questions, and encroachment was regarded as something worse than poor manners. Thus, for example, professors of psychology agreed not to pronounce on philosophical matters, and indeed, the new discipline of psychology ascended to the status of being a modern branch of knowledge only on the condition that it silently relinquished Freud, whose many interests appeared, in the new context, the mark of a disorderly mind. The only reminder in the modern university of the golden age before disciplinarity was in the very credential that certified disciplinary expertise: the degree called Doctor of Philosophy.

In the Academy's Workrooms

In the modern university, all disciplines strive to distinguish themselves from all others. In doing so, they repeat at a lower level a primary distinction between the humanities and the sciences, with the former taking human beings and their thoughts, imaginings, capacities and works as its subject and the latter taking on the nonhuman world, of which the human can be seen as a mere epiphenomenon.

Within the humanities, each subfield claims its own territory. Philosophy, for example, examines the conditions of human life and thought, focusing in particular on the question of free will and choice that informs both ethics and aesthetics. Its mode can be described, very broadly, as analysis. History focuses its efforts on the archive of specifically human endeavor and achievement, and this focus provides not only a subject, but also a certain scale and style of analysis. As a discipline, history is primarily predisposed not to analysis but to chronology or narrative, which is capable of representing events in a causal series.

Criticism of the arts defines itself more by its object—paintings, musical scores or performances, buildings, films or literary texts—than by its methodology, which can incline either toward philosophy in the form of analysis, or toward history, the production or reception of the artifact. Sometimes multiple approaches are comprehended in the same critical work. As its subject is creativity, criticism of the arts must itself be creative in determining its own orientation, its own projects, its own methodology.

The demarcation of fields makes it possible not only to achieve precise sectoral knowledge, but also to mark the progress of knowledge as limited sets of problems are solved, one after another. Compartmentalization also, however, creates a host of unintended consequences, and some of these have proved to be just as productive as the intended ones. By limiting the kinds of questions that can be posed, departmental thought intentionally screens out certain features of reality, and while this partial blindness can be counted as a necessary condition of modern knowledge, it creates the conditions for an interdisciplinary reaction that blends two or more approaches to achieve results unobtainable by either: hence biochemistry, sociobiology, genetic engineering, architectural ethics and countless other innovations that are virtually invited by the limitations of disciplinarity.

Poachers on Unguarded Turf

But the most exciting and unpredictable unintended consequence of disciplinarity is the opportunity it creates for poaching, which happens when one discipline opts out of the gentleman's agreement allotting certain questions to certain disciplines and starts answering questions it is not even supposed to ask. This is happening today. Certain disciplines of science—having endured the skeptical and even debunking attention of philosophy, history, gender studies, cultural studies and literary studies, not to mention "science studies"—have for some time been engaging in a quiet counteroffensive by making a series of little raids, each one limited in its scope and aspirations but potentially immense in the aggregate, on the one question above all that has been ruled off limits for them—the question of the human.

This question is so large that it has not been approached directly even in the humanities disciplines, which have presumed rather than interrogated it. Each of the fundamental categories of humanistic research—history, philosophy and criticism of the arts—investigates a basic or elemental feature of human being. Philosophy is particularly interested in the limits of human autonomy, of the capacity for self-determination, self-awareness and self-regulation that is central to our conceptions of free will, reason, the capacity for self-regulation and moral accountability.

These issues anchor one of the traditional cores of philosophy, ethics, and also inform the more recent emphasis on language and representation that has dominated much professional philosophy since the "linguistic turn" that began in the 1930s. Where philosophy presumes human autonomy, history presumes human singularity, the distinctness of the species from other animals, the environment and machines. Criticism of the arts focuses on human creativity, which it defines as the human capacity to produce meaningful representations or forms.

These presumptions have governed scholarship in the humanities, but while humanistic scholars have been presuming core facts about human nature, human capacities and human being, scientists have been getting to work. One of the most striking features of contemporary intellectual life is the fact that questions formerly reserved for the humanities are today being approached by scientists in various disciplines such as cognitive science, cognitive neuroscience, robotics, artificial life, behavioral genetics and evolutionary biology. (Indeed, some of the most suggestive work is being done not just outside the humanities but outside the university, by inventors and innovators in the for-profit sector.)

Aspects of the question of autonomy are being taken up not just by philosophers but by investigators in cognitive science, genomics, biochemistry and the technology of bioinformatics. In all these fields, the presumed autonomy of the free human subject is being interrogated and complicated. The presumption of singularity that informs history is also being pressed hard by those working in computational science, animal intelligence, genetic engineering and evolutionary biology, all of which are making it harder to speak in traditional ways about the splendid self-sufficiency of the human

species.

And creativity—the most splendid of all properties of human being, according to the humanities—is now being itself redefined by linguistics, cognitive science, neuroscience and even software development, which are assigning new meanings to this term, meanings that do not necessarily funnel back to the individual human being in a state of inspired frenzy.

Through Open Doors, Discourse

Autonomy, singularity, creativity—each of these terms names both a long-standing concern of the humanities and a set of contemporary projects being undertaken in the sciences.

Many such projects—from the relatively familiar such as stem-cell research and the Human Genome Project to the more exotic, such as attempts to upload the component parts of consciousness into a computer, bioinformatics, and advanced nanotechnology—appear to have serious implications for our basic understanding of human being. These projects may well force us to modify our understanding of traditional moral and philosophical questions, including the definition of and value attached to such presumptively nonhuman concepts as "the animal" and "the machine."

Humanists, who have been only partially aware of the work being done by scientists and other nonhumanists on their own most fundamental concepts, must try to overcome their disciplinary and temperamental resistances and welcome these developments as offering a new grounding for their own work. They must commit themselves to be not just spectators marveling at new miracles, but coinvestigators of these miracles, synthesizing, weighing, judging and translating into the vernacular so that new ideas can enter public discourse.

They—we—must understand that while scientists are indeed poaching our concepts, poaching in general is one of the ways in which disciplines are reinvigorated, and this particular act of thievery is nothing less than the primary driver of the transformation of knowledge today. For their part, those investigating the human condition from a nonhumanistic perspective must accept the contributions of humanists, who have a deep and abiding stake in all knowledge related to the question of the human.

We stand today at a critical juncture not just in the history of disciplines but of human self-understanding, one that presents remarkable and unprecedented opportunities for thinkers of all descriptions. A rich, deep and extended conversation between humanists and scientists on the question of the human could have implications well beyond the academy. It could result in the rejuvenation of many disciplines, and even in a reconfiguration of disciplines themselves—in short, a new golden age.